This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1-23. (Canceled)

24. (New) A method for isolating DNA encoding a homologue of human histamine H3 receptor comprising the steps of:

(a) mixing human histamine H3 receptor DNA with a sample comprising DNA encoding a homologue of human histamine H3 receptor;

(b) allowing said human histamine H3 receptor DNA to hybridize with said DNA encoding a homologue of human histamine H3 receptor to form a hybridized DNA complex;

(c) isolating the hybridized DNA complex; and

(d) purifying the DNA encoding a human histamine H3 receptor homologue.

25. (New) The method according to claim 24 wherein said human histamine H3 receptor DNA has a nucleotide sequence of SEQ ID NO:5 or SEQ ID NO:6.

26. (New) The method according to claim 24 wherein said human histamine H3 receptor has an amino acid sequence of SEQ ID NO:7.

27. (New) A method for producing a homologue of human histamine H3 receptor comprising the steps of:

(a) mixing human histamine H3 receptor DNA with a sample comprising DNA encoding a homologue of human histamine H3 receptor;

(b) allowing said human histamine H3 receptor DNA to hybridize with said DNA encoding a homologue of human histamine H3 receptor to form a hybridized DNA complex;

(c) isolating the hybridized DNA complex;

(d) purifying the DNA encoding a human histamine H3 receptor homologue; and

(e) recombinantly expressing said DNA encoding a human histamine H3 receptor homologue,

thereby producing said human histamine H3 receptor homologue.

28. (New) The method according to claim 27 wherein said human histamine H3 receptor DNA has a nucleotide sequence of SEQ ID NO:5 or SEQ ID NO:6.

29. (New) The method according to claim 27 wherein said human histamine H3 receptor has an amino acid sequence of SEQ ID NO:7.

30. (New) The method according to claim 27 wherein said human histamine H3 receptor homologue comprises at least one amino acid variation relative to the amino acid sequence of SEQ ID NO:7 which does not substantially alter the biological activity of the expressed polypeptide relative to a polypeptide having an amino acid sequence of SEQ ID NO:7.

31. (New) The method according to claim 30, wherein said biological activity is measured by a ligand binding assay.

32. (New) The method according to claim 31 wherein said ligand is histamine or methylhistamine.

33. (New) The method according to claim 31 or 32 wherein said ligand is radiolabeled.

34. (New) The method according to claim 27 wherein said homologue has a greater affinity for a ligand than the polypeptide having an amino acid sequence of SEQ ID NO:7.

35. (New) The method according to claim 27 wherein said homologue has a reduced affinity for a ligand than the polypeptide having an amino acid sequence of SEQ ID NO:7.

36. (New) The method according to claim 34 or 35 wherein said ligand is histamine or methylhistamine.

37. (New) A method for detecting the presence of human histamine H3 receptor in a sample comprising the steps of:

(a) mixing said sample with a monospecific antibody immunologically reactive with human histamine H3 receptor; and

(b) detecting binding of said antibody to a human histamine H3 receptor in said sample.

38. (New) A method for detecting the presence of human histamine H3 receptor DNA in a sample comprising nucleic acids, said method comprising the steps of:

(a) mixing said sample with a nucleic acid molecule having a nucleotide sequence of SEQ ID NO:5, a nucleotide sequence of SEQ ID NO:6, a nucleotide sequence of SEQ ID NO:8, a nucleotide sequence encoding SEQ ID NO:7, or a fragment thereof; and

(b) detecting hybridization of said nucleic acid molecule to a nucleic acid in said sample.

39. (New) A kit for detecting the presence of human histamine H3 receptor in a sample comprising a monospecific antibody that for a human histamine H3 receptor and optionally a container.

40. (New) A kit for detecting the presence of a human histamine H3 receptor DNA comprising a nucleic acid molecule of SEQ ID NO:5, 6, or 8, a nucleic acid molecule encoding the amino acid sequence of SEQ ID NO:7, or a fragment thereof, and optionally a container.